AMENDMENTS TO THE CLAIMS

Claims 1-60 (Cancelled)

61. (Currently amended) A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is attached to a plurality of longitudinal rovings and pulled through a pultrusion die along a continuous longitudinal pull direction, the method of making the reinforcing structure comprising the steps of:

arranging a plurality of first reinforcing fibers in a direction generally transverse to the longitudinal pull direction in a generally planar, non-overlapping configuration so that the first reinforcing fibers do not extend over or cover one another;

arranging a plurality of second reinforcing fibers in a direction different than the direction of the first reinforcing fibers and in a generally planar, non-overlapping configuration so that the second reinforcing fibers do not extend over or cover one another; and

bonding a permeable transport web of staple fibers to the first and second reinforcing fibers to provide longitudinal strength, shear strength and anti-skew properties sufficient to substantially maintain the relative orientations of the first and second reinforcing fibers when subjected to the pulling forces encountered during pultrusion, so that the reinforcing structure ~~having~~ has a thickness of about 0.020 inches ~~or less~~ and the portion of the first reinforcing fibers oriented in the direction generally transverse to the longitudinal direction comprises at least 40% of a total volume of materials comprising the reinforcing structure.

62. (Previously presented) The method of claim 71 comprising arranging the plurality of first reinforcing fibers such that the portion of the first reinforcing fibers oriented in the direction transverse to the pull direction comprises at least 50% of the volume of the materials comprising the reinforcing structure.

63. (Previously presented) The method of claim 71 comprising bonding the permeable transport web to the first and second reinforcing fibers to that the reinforcing structure has a thickness of about 0.010 inches or less.

64. (Previously presented) The method of claim 71 comprising preparing the staple fibers to have a length of about ½ inch to about 4 inches.

65. (Previously presented) The method of claim 71 comprising preparing the staple fibers to have a length of about 0.01 inch to about 12 inches.

66. (Previously presented) The method of claim 71 comprising preparing the staple fibers to have a weight of about 60 grams per square meter to about 300 grams per square meter before attachment to the first reinforcing fibers.

67. (Previously presented) The method of claim 71 comprising preparing the staple fibers to have a weight of about 10 grams per square meter to about 1200 grams per square meter before attachment to the first reinforcing fibers.

68. (Previously presented) The method of claim 71 comprising preparing the permeable transport web from heat-fusible fibers.

69. (Previously presented) The method of claim 71 comprising preparing the permeable transport web from at least two different polymeric fibers each with different glass transition temperature.

70. (Previously presented) The method of claim 69 wherein the at least two polymeric fibers comprise a glass transition temperature of about 350 °F and about 270 °F, respectively.

71. (Previously presented) The method of claim 71 comprising preparing the permeable transport web from a plurality of first polymeric fibers having a first glass transition temperature, and a plurality of bi-component fibers having a first component and a second component, wherein the first component has the first glass transition temperature and the second component has a second grass transition temperature, wherein the second glass transition temperature is less than the first glass transition temperature.

72. (Previously presented) The method of claim 71 wherein the bi-component fibers comprise a core-sheath configuration.

73. (Previously presented) The method of claim 71 wherein the reinforcing structure comprises in-plane mechanical and directional stability.

74. (Previously presented) The method of claim 71 comprising randomly entangling at least a portion of fibers in the permeable transport web with the first reinforcing fibers.

75. (Previously presented) The method of claim 71 comprising thermally bonding at least a portion of fibers in the permeable transport web with the first reinforcing fibers.

76. (Previously presented) The method of claim 71 comprising attaching the first reinforcing fibers in a spaced-apart configuration with a continuous stitching fiber.

77. (Previously presented) The method of claim 76 wherein the stitching fiber comprises glass fibers, natural fibers, carbon fibers, metal fibers, ceramic fibers, synthetic or polymeric fibers, composite fibers including one or more components of

glass, natural materials, metal, ceramic, carbon, and/or synthetics components, or a combination thereof.

78. (Previously presented) The method of claim 71 comprising applying a binder to the permeable transport web and the first reinforcing fibers.

79. (Previously presented) The method of claim 78 wherein the binder comprises one or more of a specialized latex binder diluted in a water carrier, a polyvinyl acetate emulsion, or a crosslinking polyvinyl acetate emulsion.

80. (Previously presented) The method of claim 71 comprising forming a plurality of perforations through the permeable transport web and between the first reinforcing fibers.

81. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a permeability of at least 180 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

82. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a permeability of about 300 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

83. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a permeability of more than 350 ft^3/minute/ft^2 as measured according to the procedure of ASTM D737-96 with a pressure differential of about 0.5 inch column of water.

84. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a circular bending stiffness of at least about 4 Newtons as measured according to the procedure of ASTM D4032-94.

85. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a circular bending stiffness in a range of at least 4 Newtons to about 15 Newtons as measured according to the procedure of ASTM D4032-94.

86. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a thickness of about 0.004 inches to about 0.020 inches.

87. (Previously presented) The method of claim 71 comprising preparing the permeably transport web with a thickness of about 0.010 inches to about 0.012 inches.

88. (Previously presented) The reinforcement structure of claim 71 comprising preparing the permeably transport web with a tensile strength in the transverse direction of about 200 lbs/inch as measured using the procedure of ASTM D76-99.

89. (Previously presented) The reinforcement structure of claim 71 comprising preparing the permeably transport web with a tensile strength in the pull direction of at least 6 lbs/inch as measured using the procedure of ASTM D76-99.

90. (Previously presented) The method of claim 71 comprising selecting the first reinforcing fibers from a group consisting of glass fibers, natural fibers, carbon fibers, metal fibers, ceramic fibers, synthetic or polymeric fibers, composite fibers

including one or more components of glass, natural materials, metal, ceramic, carbon, and/or synthetics components, or a combination thereof.

91. (Previously presented) The method of claim 71 comprising preparing the first reinforcing fibers with at least one polymeric component.

92. (Previously presented) The method of claim 71 comprising coating the first reinforcing fibers with a surface treatment including an organosilane agent.

93. (Previously presented) The reinforcement structure of claim 92 wherein the organosilane agent comprises one or more families of a cationic amino-functional silane, Tris (2- methoxyethoxyvinylsilane), or 3-methacryloxypropyltrimethoxysilane.

94. (Previously presented) The method of claim 71 comprising arranging the first reinforcing fibers in a direction about 90° +/- 10° relative to the pull direction.

95. (Previously presented) The method of claim 71 comprising arranging the first reinforcing fibers in a direction about 90° +/- 5° relative to the pull direction.

96. (Previously presented) The method of claim 71 comprising arranging substantially all of the first reinforcing fibers to extend continuously across a width of the reinforcing structure.

97. (Previously presented) The method of claim 71 comprising attaching the reinforcing structure to the longitudinal rovings.

98. (Previously presented) The method of claim 71 comprising arranging the plurality of second reinforcing fibers at one or more acute angles relative to the pull direction.

99. (Previously presented) The method of claim 71 comprising arranging the plurality of second reinforcing fibers at a first acute angle relative to the pull direction and arranging a plurality of third reinforcing fibers at a second acute angle that is the negative of the first acute angle in a generally planar, non-overlapping configuration so that the third reinforcing fibers do not extend over or cover one another.

100. (Previously presented) The method of claim 99 comprising arranging a plurality of fourth reinforcing fibers in the pull direction in a generally planar, non-overlapping configuration so that the fourth reinforcing fibers do not extend over or cover one another.

101. (Previously presented) The method of claim 99 comprising locating the first reinforcing fibers between the second and third reinforcing fibers.

102. (Previously presented) The method of claim 71 comprising the steps of:

arranging the plurality of second reinforcing fibers at a first acute angle relative to the pull direction;

arranging a plurality of third reinforcing fibers at a second acute angle that is the negative of the first acute angle; and

arranging a plurality of fourth reinforcing fibers generally in the pull direction.

103. (Previously presented) The method of claim 102 comprising randomly entangling at least a portion of fibers in the permeable transport web with one or more of the first, second, third or fourth reinforcing fibers.

104. (Previously presented) The method of claim 102 comprising thermally bonding at least a portion of fibers in the permeable transport web with one or more of the first, second, third or fourth reinforcing fibers.

105. (Previously presented) The method of claim 102 comprising stitching the first reinforcing fibers to one or more of the permeable transport web, the second reinforcing fibers, the third reinforcing fibers, and the fourth reinforcing fibers.

106. (Previously presented) The method of claim 102 comprising applying a binder to the permeable transport web and to one or more of the first, second, third or fourth reinforcing fibers.

107. (Previously presented) The method of claim 102 comprising preparing one or more of the first, second, third or fourth reinforcing fibers with a polymeric component.

108. (Previously presented) The method of claim 102 comprising locating the first reinforcing fibers between the second and third reinforcing fibers and the fourth reinforcing fibers.

109. (Previously presented) The method of claim 102 comprising preparing the first, second, third or fourth reinforcing fibers as discrete layers.

110. (Currently amended) A method of preparing a reinforcing structure for use in manufacture a pultruded part where the reinforcing structure is pulled through a pultrusion die along a continuous longitudinal pull direction, the method of making the reinforcing structure comprising the steps of:

arranging a plurality of first reinforcing fibers in a direction generally transverse to the longitudinal pull direction in a generally planar, non-overlapping configuration so that the first reinforcing fibers do not extend over or cover one another;

arranging a plurality of second reinforcing fibers in the longitudinal pull direction and in a generally planar, non-overlapping configuration so that the second reinforcing fibers do not extend over or cover one another; and

bonding a permeable transport web of staple fibers to the first and second reinforcing fibers to provide longitudinal strength, shear strength and anti-skew properties sufficient to substantially maintain the relative orientations of the first and second reinforcing fibers when subjected to the pulling forces encountered during pultrusion, so that the reinforcing structure ~~having~~ has a thickness of about 0.020 inches ~~or less~~ and the portion of the first reinforcing fibers oriented in the direction generally transverse to the longitudinal direction comprises at least 40% of a total volume of materials comprising the reinforcing structure.

111. (Previously presented) The method of claim 110 comprising arranging the plurality of second reinforcing fibers at a first acute angle relative to the pull direction and arranging a plurality of third reinforcing fibers at a second acute angle that is the negative of the first acute angle in a generally planar, non-overlapping configuration so that the third reinforcing fibers do not extend over or cover one another.